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Danish delight - glorious tube sound, with style

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UK £5.25 US \$13.00 Aus \$13.50



INTEGRATED AMPLIFIER

Integrated tube amplifier. Rated at 75W/8ohm
 Made by: Copland, Copenhagen, Denmark
 Supplied by: Absolute Sounds Ltd
 Telephone: 0208 971 3909
 Web: www.copland.dk; www.absolutesounds.com
 Price: £6398

AUDIO FILE

Copland CTA408

A modern integrated amp with the valve *du jour*, Copland's CTA408 leaves nothing out and delivers the lot – could this be the biggest bargain in high-end audio?

Review: **Ken Kessler** Lab: **Paul Miller**

Of late, I have been banging on, to the dismay of many, about how high-end audio has priced itself beyond any regard for reality. That said, context is everything. So, if I tell you a burger can cost £18 in a London restaurant and that Copland's CTA408 integrated tube amp is actually a bit of a bargain at £6398, please accept that I'm painfully aware the latter sum is a fortune to many, but the former is highway robbery. Eighteen quid for a burger!

Anyway, my reasoning for deeming the Copland a great buy is based on a recipe which is, by current market norms, overly generous. If not, then tell me, please, what boxes *aren't* ticked in the following list?

Handsome styling, magnificent build quality, a quartet of KT150s (my fave modern valve), a proper tape-or-processor loop, a mixed MOSFET/triode tube preamp stage, plus a MM/MC phono stage with inputs for two decks and three selectable loads for the MC. There's also full remote control, a motorised volume control, a Class A headphone amp, a choice of black or silver front panels and robust, multi-way speaker terminals for 4 or 8ohm.

ANALOGUE LOVERS

If that isn't enough, please allow me to answer the question. Aside from the lack of a balanced input, I can think of nothing else that's missing. As for the absence of a DAC, that is no great hardship in a world where killer mini-DACs exist for under £100. Moreover, the CTA408 is unashamedly aimed at analogue lovers.

Behind the amusingly retro looks – the pattern of the front-panel ventilation slots recalls 1940s radio grilles – is a modern valve integrated amplifier, which I realise is an oxymoron to some of you. But, as PM reminded me with peerless perception, 'The KT150 "gherkin" has kick-started

RIGHT: Linear PSU [top right] feeds a 12AY7 and 12BH7 triode per channel [left of blue caps] and pairs of KT150 output tubes [centre]. J-FET phono stage is separately screened [far right]; output transformers [right] have two secondaries

numerous new and revamped valve amps from Audio Research to Icon Audio. Would we be seeing so many new tube amps if development had stopped with the KT88?

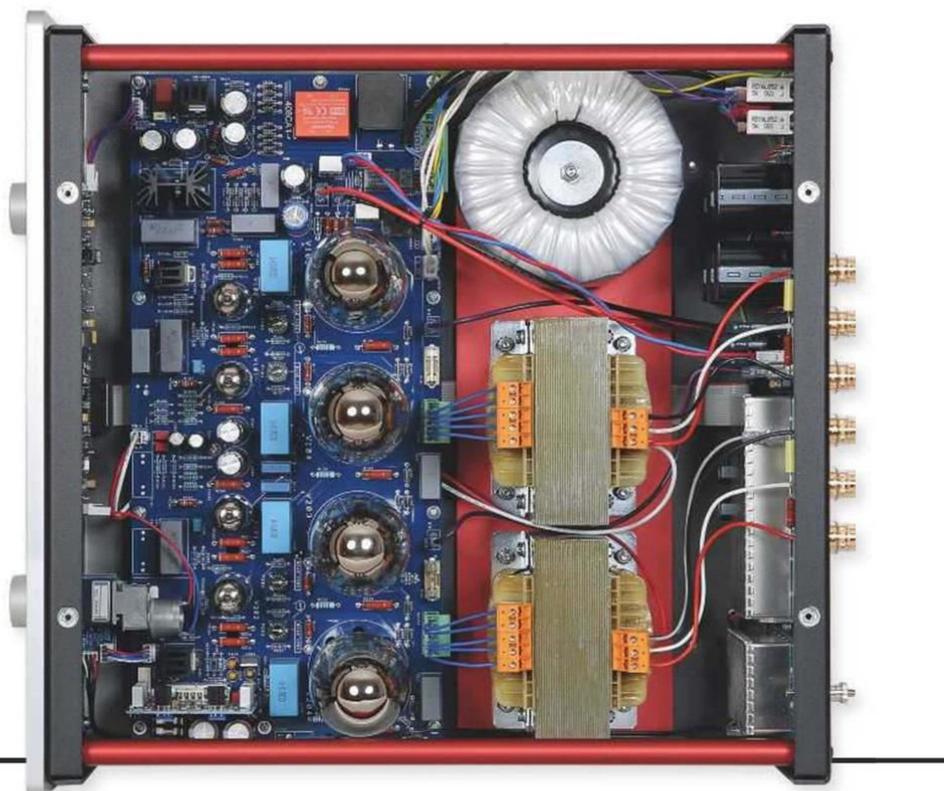
Modernity continues with a phono stage that uses J-FETs and active RIAA equalisation courtesy of 'more than one hundred discrete components inside a noise-shielding box of its own'. As our interior shot shows [see below], this unit is endowed with a generous, sophisticated power supply. Copland also makes the output transformers in-house, and it's to these designs that one might attribute in part the rock-solid, deeply extended bass – as heard through the revealing Wilson Yvette loudspeakers [HFN Feb '17].

Brief aside, which shows you how at least one reviewer's mind works. It swiftly occurred to me that I was listening to an integrated not too far removed from my reference amplifier, because the trusty

Audio Research REF75SE on which I depend derives its power from a quartet of KT150s. As a result, these are the tubes I've been listening to for a couple of years, and as all of you know, one's ears become seasoned to a system's sound. It also explains why the CTA408 had no trouble driving the Yvettes with such ease – the KT150 is one balls-y bottle [see PM's Lab Report, p51].

PURE INSTINCT

To shield the glassware from a switch-on surge, they are protected by a soft-start warm-up period. The display doesn't illuminate until the sequence is completed. Once you press the power button on the remote or the standby button on the fascia (having switched on the mains at the back), a flashing 'On' lamp indicates that the CTA408 start-up procedure has commenced, taking around 30 seconds. After this initial stage in the warm-up





ABOVE: No digital inputs, but the CTA408 is equipped with a (solid-state) MM/MC phono stage and four single-ended line inputs feeding the (valve) pre/power stages. The 4mm loudspeaker outputs are notionally configured for 8 and 4ohm loads

With Julie London's take of 'Bewitched, Bothered And Bewildered' on *The Best Of... 1955-1962* [Real Gone Jazz RGJCD 514], the breathiness that characterises her delivery – she could render salacious 'Rudolph The Red-Nosed Reindeer' – was earthier than I'd heard through most systems, nearly matching the vivacity of the far dearer Audio Research REF6 preamp [HFN May '16] and REF75SE power amp combination. As subtleties go, this makes you reach for the headphones just to confirm what you think you just heard.

TUBE TALK

I'm trying to be careful here, and really don't want to overdo the similarities to the ARC combination. That pairing has greater impact, headroom and scale, but then it should at more than double the price. The CTA408, then, emerges as a scaled-down facsimile, not least because of the identical output tube complement, and that is *not* a backhanded compliment. This

is one for the grown-ups, even if they have a bias toward separate pre/power combinations.

I would like to think that this reasoning makes sense. If you heard a group of properly-designed 35W amps containing

LEFT: Copland's RC-102A handset includes CD control keys (there's no player in the range) plus amp input selection/volume



EL34 tubes or a selection of 50W/ch amps with 6550s, you would discern the characteristics of the valves through whatever the designers did to voice them in their own way. For those acclimatised to KT150s over a long period, the behaviour is unmistakable, and the Copland CTA408 positively celebrates the valve's persona.

Which is my way of saying that this is a hugely illustrative amplifier for showcasing the KT150 – and that's a tube which I consider to be not only the salvation of the valve amp genre but its greatest ambassador for new-to-tubes listeners. Turning to the superlative phono stage, I played again the LPs I used for the VPI turntable sessions, as the sound was fresh but through different electronics.

The knockout came from a spin of *The Best Of '66 Volume Two* [CBS ABS1], which showed the amplifier's command of silky strings, punchy brass and what might well be this design's most outstanding trait: a soundstage so massive that even the LS3/5a speakers sounded as if they had mainlined steroids. Or should that be stere-oids? ☺

HI-FI NEWS VERDICT

At a time when companies are hawking cables with prices per metre equal to the cost of a new kitchen or an SUV, it's uplifting to be able to say that here is something which delivers double what you pay for it. The Copland CTA408 isn't just fully-equipped and with perfect usability, it also sounds like £25,000 worth of separates. This just may be the best-value high-end integrated of the decade. I love it..

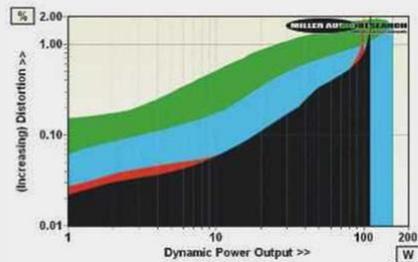
Sound Quality: 88%
 0 - - - - - 100

LAB REPORT

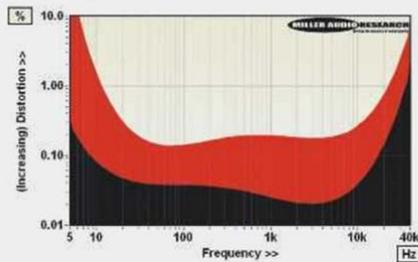
COPLAND CTA408

While Copland offers two output taps from its speaker coupling transformers – 8ohm and 4ohm – its 75W power is specified, unusually, into 8ohm and 3ohm. Either way, the CTA408 readily bests this figure, delivering 2x95W/8ohm and 2x90W/4ohm via its 8ohm and 4ohm taps, respectively. Under dynamic conditions this increases to 110W and 100W into 8/4ohm loads (8/4ohm taps) up to 1% THD and 155W/160W into 2/1ohm loads (4ohm tap) with the distortion limit relaxed to 2% [see Graph 1, below]. Distortion scales with output level and frequency, and although the pairs of KT150 tubes are matched at Copland's factory, and the bias adapted accordingly, there was still a difference between L and R channels in our sample. (The fact that it's the protective shipping boxes and not the tubes themselves that are marked V103/V104, etc, is simply asking for trouble the moment a CTA408 is packed and moved from demo to demo...)

In this instance, distortion increases from 0.022%/1W to 0.2%/10W (left) and 0.07%/10W (right) before coalescing at 0.75%/75W – all at 1kHz/8ohm. The modest 15dB overall NF also means distortion increases with frequency – 0.7%/10W/20kHz (left) and 1.5%/10W/20kHz (right) – and at low bass frequencies through transformer core saturation [a feature of every such tube amp; see Graph 2, below]. Otherwise, the 0.9-1.1ohm output impedance is well matched between channels, as is the 83.5dB A-wtd S/N ratio (re. 0dBW), but is sufficient to cause variations in system response with swings in loudspeaker load impedance. Into a 'flat' 8ohm load the response is good for –0.2dB/20kHz and –3dB/60kHz (8ohm tap) and holds firm out to 30kHz right down to 1ohm loads (via 4ohm tap). PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max. current is 12.7A



ABOVE: Distortion versus extended frequency from 5Hz-40kHz at 1W/8ohm (black) and 10W/8ohm (red)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	95W / 90W
Dynamic power (<2% THD, 8/4/2/1ohm)	110W / 100W / 155W / 160W
Output imp. (20Hz-20kHz/100kHz)	0.890-1.10ohm / 2.35ohm
Freq. resp. (20Hz-20kHz/100kHz)	-0.05dB to -0.23dB/-4.75dB
Input sensitivity (for 0dBW/75W)	24mV / 218mV
A-wtd S/N ratio (re. 0dBW/75W)	83.5dB / 102.3dB
Distortion (20Hz-20kHz, 10W/8ohm)	0.05-1.2%
Power consumption (Idle/Rated o/p)	190W / 410W (2W standby)
Dimensions (WHD) / Weight	435x220x460mm / 25kg